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09/732,570	12/08/2000	Mark Steven Boggs	99P07535 US04	6769

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Siemens Corporation  
Intellectual Property Department  
186 Wood Avenue South  
Iselin, NJ 08830

EXAMINER
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KANG, INSUN

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/732,570

Applicant(s)

BOGGS ET AL.

Examiner

Insun Kang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 52-58 and 84-96 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 52-58 and 84-96 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

BD

### **DETAILED ACTION**

1. This action is in response to the amendment filed 2/25/2005.
2. As per applicant's request, claims 59-62 have been cancelled, claim 52 has been amended and claims 84-96 have been added. Claims 52-58 and 84-96 are pending in the application.

### ***Claim Objections***

3. Claim 90 is objected to because of the following informalities: there appears to be a missing ';' after "cycle" in line 3. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 52-58 and 84-94 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 52 recites the limitation "said another section" in line 10. There is insufficient antecedent basis for this limitation in the claim, as "another" is deleted.

Per claims 88-90 and 94, it is unclear how the limitations in these claims are related and further limit the limitations in claim 52.

Per claims 86-87, in line 2, the term "adapted to" is unclear. It has been held that the recitation that an element is "adapted to" perform a function is not a positive

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limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

As per claims 53-58, 84-85, and 91-93, these claims are rejected for dependency on the above rejected parent claim. Correction is required.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 52-58 and 84-96 are rejected under 35 U.S.C. 102(e) as being anticipated by Logan III et al. (US Patent 6,243,857), hereinafter referred to as "Logan."

Per claim 52:

Logan discloses:

-regarding an entire program stored in a first section of memory and executed by a programmable logic controller, while said entire program is executing and without significantly interfering with execution timing of said program (i.e. "the display of the continuous or contiguous flowcharts, or portions thereof, provides for ease of editing as well as entry, with the debugging unit 34 providing for ease of debugging an original

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program during a run-time execution of the program,” col. 3 lines 58-67; “the debugger allows the operator to isolate and display the particular program blocks which were executing at the time of the interrupt and then re-edit the program through an editor,” col. 4 lines 37-48)

- displaying a section of said program indicated by a user to be debugged, said section comprising fewer instructions than said entire program (i.e. “the debugger...is supplied with data...in which when an interrupt is inputted via the keypad...providing data to the debugger to indicated which block or blocks are being executed at the time of interrupt. Inhibit signals come from the keyboard 92... The Debugger...drives the display to highlight the particular block which was executing at the time of interrupt... The block numbers are displayed for purpose of enabling the programmer to get back into the flowchart at the required spot and highlights are utilized to indicate, during an interrupt cycle, which blocks in the program were executing at the time of the interrupt...only the flowcharts that are necessary to be edited will be called up to the display,” col 5 lines 25-col 6 lines 17)

- compiling said section of said program to be debugged in second section of memory (i.e. “in which during an interrupt, the flowchart bocks may be highlighted by the aforementioned debugger...to correct whatever was the problem with the initial program. Thereafter, upon recompiling, the program...is executed ...with the simple editing having been accomplished through the addition of an additional set of blocks...displayed values may be changed in the debugger, and the displayed values executed without going through a complete recompile...the debugger allows the

operator to isolate and display the particular program blocks which were executing at the time of the interrupt and then re-edit the program through an editor...After the...changes have been made by the editor, they are compiled by the compiler and loaded into the Executive program so that the machine may be properly controlled," col 4 lines 1-56)

-jumping to said another section of said memory during execution of said program when an instruction indicated to be debugged is to be executed Logan discloses compiling a user-indicated section of a program in another section of memory as shown above. Therefore, accordingly, Logan inherently discloses jumping to another section of memory as claimed.

- capturing a status of said instruction as it is executed (i.e. "ease of editing as well as entry, with the debugging unit 34 providing for ease of debugging an original program during a run-time execution of the program," col. 3 lines 58-67) as claimed.

Per claim 54:

The rejection of claim 52 is incorporated and Logan further discloses the step of restoring the original compiled code once the status is captured (i.e. col. 4 lines 16-28) as claimed.

Per claim 53, this claim is another version of the claimed method discussed in claims 54, wherein all claim limitations also have been addressed and/or covered in cited areas as set forth the above. To restore the original code once the status is captured as

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stated in claim 54, the step of returning to said compiled code in claim 53 is necessary and accordingly, this feature is inherent in Logan's disclosed method.

Per claim 55:

The rejection of claim 52 is incorporated and Logan further discloses the step of instrumenting each instruction compiled in said another section of memory (i.e. col. 4 lines 1-56) as claimed.

Per claim 56:

The rejection of claim 52 is incorporated and Logan further discloses the step of storing a table relating instructions to boolean expressions, wherein said instructions are debugged with the boolean expressions (i.e. col. 4 lines 16-28) as claimed.

Per claim 57:

The rejection of claim 52 is incorporated and Logan further discloses the step of providing a table of pointers to instructions of said original compiled code, wherein said instructions are located in memory during debugging (i.e. col. 4 lines 16-28) as claimed.

Per claim 58:

The rejection of claim 52 is incorporated and Logan further discloses the step of limiting a data size of each compiled instruction, wherein execution of said instructions to be debugged is faster and memory required to store said instructions is reduced (i.e. col. 4 lines 16-28) as claimed.

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Per claim 84:

The rejection of claim 52 is incorporated and Logan further discloses:

providing a table relating instructions to Boolean expressions, wherein said section of said program is debugged utilizing said Boolean expressions (i.e. col. 4 lines 16-28) as claimed.

Per claim 85:

The rejection of claim 52 is incorporated and Logan further discloses:

providing a table of pointers to instructions of said entire program (i.e. col. 4 lines 16-28) as claimed.

Per claim 86:

The rejection of claim 52 is incorporated and Logan further discloses:

providing a machine code instruction adapted to save a power flow status associated with said section of said program(i.e. col. 4 lines 16-28) as claimed.

Per claim 87:

The rejection of claim 52 is incorporated and Logan further discloses:

providing a machine code instruction adapted to save an operand value status associated with said section of said program(i.e. col. 4 lines 16-28) as claimed.

Per claim 88:



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The rejection of claim 52 is incorporated and Logan further discloses:

comparing a scan count status word to a current value of a scan counter to determine that said status came from a single scan cycle (col. 4 lines 1-15) as claimed.

Per claim 89:

The rejection of claim 52 is incorporated and Logan further discloses:

copying a scan counter value to a scan count status word to determine that said status came from a single scan cycle (col. 4 lines 1-15) as claimed.

Per claim 90:

The rejection of claim 52 is incorporated and Logan further discloses:

comparing a scan count status word to a current value of a scan counter to determine that said status came from a single scan cycle (col. 4 lines 1-15)

clearing a flag in a buffer if said scan count status word is different from said current value of said scan counter (col. 4 lines 1-15) as claimed.

Per claim 91:

The rejection of claim 52 is incorporated and Logan further discloses:

acquiring results from an execution of said section of said program (col. 4 lines 1-15) as claimed.

Per claim 92:

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The rejection of claim 52 is incorporated and Logan further discloses:  
executing said section of said program (col. 4 lines 1-15) as claimed.

Per claim 93:

The rejection of claim 52 is incorporated and Logan further discloses:  
displaying results from an execution of said section of said section of said program on a  
human machine interface of said programmable logic controller(col. 4 lines 1-15) as  
claimed.

Per claim 94:

The rejection of claim 52 is incorporated and Logan further discloses:  
determining a status window size by a number of operand values returned from an  
execution of said section of said program (col. 4 lines 1-15) as claimed.

Per claim 95, it is the machine-readable medium version of claim 52,  
respectively, and is rejected for the same reasons set forth in connection with the  
rejection of claim 52 above.

Per claim 96, it is the circuit version of claim 52, respectively, and is rejected for  
the same reasons set forth in connection with the rejection of claim 52 above.

### ***Response to Arguments***

8. Applicant's arguments filed 2/25/2005 have been fully considered but they are not persuasive.

Per claims 52:

The Applicant states that:

No evidence is presented to support that Logan inherently discloses jumping to another section of memory (page 7).

In response, the claim does not specify what the jumping to another section of memory means. Logan discloses compiling a user-indicated section of a program in another section of memory ("in which during an interrupt, the flowchart blocks may be highlighted by the aforementioned debugger...to correct whatever was the problem with the initial program. Thereafter, upon recompiling, the program...is executed ...with the simple editing having been accomplished through the addition of an additional set of blocks...displayed values may be changed in the debugger, and the displayed values executed without going through a complete recompile...the debugger allows the operator to isolate and display the particular program blocks which were executing at the time of the interrupt and then re-edit the program through an editor...After the...changes have been made by the editor, they are compiled by the compiler and loaded into the Executive program so that the machine may be properly controlled," col 4 lines 1-56). Therefore, the control is transferred to the "object memory" to execute the flowchart being edited from the "editor memory (col. 4 lines 57-67; "After the ...changes have been made by the editor, they are compiled by the compiler and loaded into the Executive program so that the machine may be properly controlled," col. 4 lines 37-56)."

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Accordingly Logan discloses jumping to another section of memory as claimed. If applicant means anything more, this must be brought out in the claims to further clarify the invention.

The Applicant states that:

Logan does not teach expressly or inherently "said entire program is executing and without significantly interfering with execution timing of said entire program (page 7).

In response, the claim does not recite what the "without significantly interfering with execution" means and therefore, the scope of the term "significantly interfering" is extremely broad. As the claim language indicates that there is interference with execution, the examiner considers this limitation as applicant's admission of the existence of interference with execution timing in the claimed debugging method. Logan discloses said entire program is executing and without significantly interfering with execution timing of said entire program (i.e. "the display of the continuous or contiguous flowcharts, or portions thereof, provides for ease of editing as well as entry, with the debugging unit 34 providing for ease of debugging an original program during a run-time execution of the program," col. 3 lines 58-67; "the debugger allows the operator to isolate and display the particular program blocks which were executing at the time of the interrupt and then re-edit the program through an editor," col. 4 lines 37-48). If applicant means anything more, this must be brought out in the claims to further clarify the invention.

Therefore, in view of the broadest reasonable interpretation above, the rejection of claim 52 is considered proper and maintained.

Per claims 53-58:

The applicant states that claims 53-58 are allowable as being dependent on the allowable base claim 52. As has been shown above, the rejection of the independent claim 52 by Logan is maintained, the argument that claims 53-58 are allowable as being dependent on the allowable base claim is considered moot. Accordingly, the rejections of claims 53-58 are also proper and maintained.

\*Note: the applicant addresses the rejections of claims 59-62; however, these claims are cancelled, as per applicant's request.

### ***Conclusion***

**9. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 7:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I. Kang  
Examiner  
5/23/2005



**TODD INGBERG**  
**PRIMARY EXAMINER**